

reaction may be a transitory function characterizing the period from immediately before till a few days after birth, serving the animals, under normal conditions, only for gaining access to the pouch and the nipple (Hartman¹). I did not observe it in specimens of 28 mm c. r. length, but I did not examine them critically for this feature.

With regard to coördination of the hind legs with the fore legs, Langworthy⁴ says that there was very little contraction of hind leg musculature "at an estimated age of 7 days" (27 mm), and scarcely any coördination "at 36 days" (49 mm). Possibly his failure to find it earlier may be due to an interference of local fields of stimulation with the mechanism of the total pattern action (Coghill⁶). The position in which I held the animal might be favorable for the free action of the limbs.

Conclusions. From my observations it is clear that, in the opossum of the first day in the pouch, there are functional commissural relations at the level of the brachial plexus, a descending (motor) path as far caudad as the lower thoracic level (for stimulation of the m. rectus abdominis) and an ascending pathway from the lumbosacral region to the upper cervical segments or the brain; also that the hind legs become motile on the 7th day in the pouch, and at a more advanced stage they become integrated with the fore legs so as to execute the walking gait before they are capable of reflex action. In the development of walking, therefore, in the opossum as in amblystoma (Coghill⁷), the gait is essentially a total pattern of action while reflexes serve for orientation and adjustment to surfaces.

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Excretion of Sex Hormones in Urine of Adult Male Monkeys.*

RALPH I. DORFMAN AND G. VAN WAGENEN.

From the Laboratory of Physiological Chemistry, the Adolescence Study Unit, and the Department of Obstetrics and Gynecology, Yale University School of Medicine.

The concentration of androgenic activity found in the urine of human males has been shown to be high in comparison to that found

⁶ Coghill, G. E., *Psychiatrische en Menrologische Bladen*, 1934, No. 3 and 4, 122.

⁷ Coghill, G. E., *Proc. Soc. Exp. Biol. and Med.*, 1929, **27**, 74.

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in the urine of stallions, bulls and rams.¹ It becomes of interest, therefore, to study the quantitative excretion of androgenic substances in the urine of the adult male monkey.

TABLE I.
Excretion of Androgenic and Estrogenic Substances in Urine of Adult Male Monkeys.

Monkey	Body weight kg	No. of days' sample	I.U.* per 24 hr	
			Estrogenic activity	Androgenic activity
A	9.0	4	2.1	1.7
A		3	—	2.4
A		4	2.0	1.3
A		4	2.5	4.1
B	10.0	4	2.1	3.8
B		3	—	1.4
B		4	1.3	4.7
B		4	<2	1.9
C	6.9	4	—	1.0
C		4	<2	3.2
C		4	—	1.9
C		4	1.1	3.7

* The International Unit of androgenic activity is that evoked by 0.1 mg of androsterone. The I.U. of estrogenic activity is that evoked by 0.1 mg of estrone.

Three normal adult rhesus monkeys of known fertility weighing between 6.9 and 10.0 kg were chosen for the urine collections. Four samples from each monkey were collected over periods of 72 or 96 hours. The method employed for the quantitative extraction of androgenic and estrogenic substances from the urines has been previously described.² The androgenic activity was assayed by means of the day-old chick's comb,³ while the estrogenic activity was determined by means of the estrus reaction in the adult spayed female mouse.

The results of the assays of both estrogenic and androgenic activity are listed in Table I. It is shown that the adult male monkey excretes both estrogenic and androgenic substances. The estrogenic activity varied from 1.1 to 2.5 I.U. per 24 hours, while the androgenic activity varied from 1.0 to 4.7 I.U. per 24 hours.

¹ Koch, F. C., *Physiol. Rev.*, 1937, **17**, 165.

² Gallagher, T. F., *et al.*, *J. Clin. Inv.*, 1937, **16**, 695.

³ Dorfman, R. I., and Greulich, W. W., *Yale J. Biol. and Med.*, 1937, **10**, 79.